



# Research on the Path of Rural Collective Economy Development and Strengthening-Based on fsQCA Grouping Analysis Approach

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**Abstract.** The rural collective economy is the cornerstone of the socialist system with Chinese characteristics, but the current rural collective economy suffers from imbalanced development and low income. This paper utilizes survey data from six districts and counties in Sichuan Province, 29 village collectives, empirically examines the three development paths for the development and growth of the rural collective economy using the CRITIC weighting method and the fsQCA qualitative research method, and finds that financial support is the core condition of the three paths, human resources support is the core condition of the two paths, governmental support is the marginal condition of the two paths, and resource support is the lack of condition of the two paths.

**Keywords:** Rural collective economy, Income, Path of realization.

## 1 Introduction

As an essential part of the public economy, the collective economy has always been the foundation for farmers to realize the goal of shared prosperity. The 2016 central "No. 1 document" clearly stated it was "to carry out support for the development of village-level collective economy pilot." Recently, the State Council issued the "14th Five-Year Plan" to promote the modernization of agriculture and rural areas, pointing out that it will accelerate the construction of a new rural collective. Developing a rural collective economy has become an essential strategic task in the current situation. Therefore, this study takes the income of the rural collective economy as the entry point and explores the growth path of the rural collective economy from the four dimensions of human support, financial support, resource support, and government support.

## **2 Theoretical Foundation**

### **2.1 Human Resources Support**

Talent is the endogenous driving force for the development of the rural collective economy; the elite talent uses their ability to develop the collective economy to play a role in demonstrating the driving force. These talents include outstanding college students, retired cadres, townspeople who have developed outside the countryside, and scientific and technological talents with specialized skills. In addition, the capable person can, through their own social relations network, guide the village to go out of the business success of the people of the soil generously run the village public welfare undertakings and agribusiness into the village collective development of enterprises, to alleviate the economic pressure of the village collective public affairs. At the same time, in the rural collective, economic development behind the village collective is inevitably inseparable from the strong support of village cadres with leadership skills<sup>[1]</sup>.

### **2.2 Financial Support**

Various ways to finance the rural collective economy include accumulating original funds at the village level, financial support from the higher level government to the lower level units, and external capital injection. First, the capital resources can be fully utilized to promote industrial transformation and upgrading and enhance internal income-generating capacity<sup>[2]</sup>. Second, the higher-level government can provide these weak village collectives with the necessary financial support in various ways to help them with construction projects and improve their income and ability to become rich. At the same time, these village collectives can also take the initiative to attract external funds to participate in project investment, further improve the village-enterprise benefit linkage mechanism, and ensure that the village-enterprises help each other and share the benefits<sup>[3]</sup>.

### **2.3 Resource Support**

Whether in economically weak or economically developed villages, collective economic development resources can be revitalized and utilized, such as natural resources, including four wastelands and natural landscape resources, and material resources, including plants, equipment, and land. However, creative thinking can revitalize existing resources and achieve good collective economic benefits regardless of economic development<sup>[4]</sup>.

### **2.4 Government Support**

In the process of developing the rural collective economy, the supportive role of the government is mainly reflected in the following three aspects: first, providing an external guarantee mechanism for the development of village collectives, providing tax and fee reduction and exemption support for collective economic projects, and solving the

problem of financing difficulties for village collectives. The second is to improve the support mechanism, build a point-to-point support system, and promote the establishment of cooperative relationships between village collectives and enterprises to achieve benefit sharing. Thirdly, a bottom-up guarantee mechanism should be provided, using special government financial funds to support the construction and development of village collective projects, and project incentive funds should be provided to encourage village collectives to develop collective economic projects actively <sup>[5]</sup>.

### **3 Empirical Testing**

#### **3.1 Data Sources**

This paper takes the rural collective economic organizations in Sichuan Province as the research object selects 29 village collectives in 6 research districts and counties in Sichuan Province, and uses the interview method and questionnaire method to conduct the research. After finishing, 29 valid questionnaires were obtained, and the validity rate was 100%, respectively.

#### **3.2 Research Methodology**

This paper adopts the CRITIC weighting method to determine the weights of each indicator system. The CRITIC method is more accurate regarding the subjective assignment results than the entropy weighting method. CRITIC to determine the weights by judging the intensity and the contrast and conflict between the indicators; fsQCA group state analysis method to empirically test the paths of the development and growth of the rural collective economy, compared with the traditional regression analysis<sup>[6]</sup>, the QCA method can be applied to both complex problems with small and medium number of samples<sup>[7]</sup>, as well as complex problems with multivariate nonlinear relationships between multiple influencing factors.

#### **3.3 Variable Selection**

This study mainly analyzes the impact of human support, financial support, resource support, and social support of each rural collective economic organization on its income, so the outcome variable is set as "In 2022, how many yuan will the income of your village's rural collective economic organization be?", whose indicator system is detailed in Table 1.

**Table 1.** System of Variable Indicators

	<b>Level 1 indicators</b>	<b>Level 2 indicators</b>	<b>Name</b>
Conditional variable	Human resources support	Core Member Education	Average years of education of core members of the collective economy in your village (years)
		Core Member Age	The average age of core members of the collective economy in your village (years)
		Core members trained time.	Average length of participation in vocational training by core members of the village collective economy, 2022 (hours)
		Age	Age of village collective legal persons (years)
		Education	Years of education of village collective legal persons (years)
		Social capital	Whether the Village Collective Legal Entity has ever worked outside the village
		Physical capital	Whether the village collective legal person has ever carried out production and business activities: 1=Yes, 0=No
		Private funds	Operating assets (\$ million)
		Government funds	Whether the government has direct financial subsidies for village collectives: 1=Yes, 0=No
		social funds	Availability of external capital to village collectives
Resource support	Material resources	Fixed assets (CNY)	
	Environmental resources	Resource assets (CNY)	
	Social resources	How is the relationship between the village collective agricultural universities/research institutes: 1=very good, 2=better, 3=fair, 4=bad, 5=very bad	
Government supports	Monetary support	Whether the government provides fiscal or financial policy support for village collectives	
	Project Support	Availability of project subsidies: 1=Yes, 0=No	
	Support Mechanisms	Whether the government actively introduces leading enterprises: 1=yes, 0=no	
	Hedging mechanism	Whether the government provides special funds for village collective economic development: 1=yes, 0=no	
Outcome variables	Village collective income	Income	What is the income of your village's rural collective economic organization in 2022?

### 3.4 Data Calibration

Based on existing theory and experience, this study used the direct calibration method to convert the data into fuzzy set affiliation scores. The sample data's 0.95 quartile, 0.5 quartile, and 0.05 quartile were used as anchor points for complete unaffiliated, intersection, and complete unaffiliate.

### 3.5 Univariate Necessity Analysis

This study analyses the antecedent conditions for growing the income of the rural collective economy with the help of fsQCA 3.0 software. The results of the analysis found that the conditional factors affecting the development and growth of the rural collective economy proposed in this paper are neither necessary nor sufficient conditions for the generation of the results, which means that it is necessary to combine several of these antecedent conditions to carry out a group study. After determining the antecedent conditions, truth tables are created to satisfy the logic of outcome generation.

The truth table represents the attribute space of variables and presents all logically possible combinations of causal conditions in a binary state. This paper sets the regulatory consistency threshold (RC) to 0.8 and the case frequency threshold to 1 to detect the non-consistent proportionality reduction (PRI). If  $RC > 0.8$  and  $PRI < 0.7$ , it is manually changed to 0, representing a low elemental level for the case.

### 3.6 Path Analysis of the Development and Growth of the Rural Collective Economy

This paper interprets the intermediate solution based on the parsimonious solution to determine the core variables. The results of the condition combinations present different paths, indicating that competitive advantage can be achieved under multiple paths. Table 2 indicates that the overall consistency of the intermediate solution is 0.906, which reaches a reasonable level of sufficient conditional consistency. Meanwhile, the consistency level of each solution exceeds 0.9, indicating that these combinations of antecedent conditions can serve as sufficient conditions for the growth of the rural collective economy. In addition, the overall coverage of the intermediate solution is 0.684, indicating that the following three groupings can explain about 68.4% of the causes of high operational efficiency.

As seen in Table 2, three conditions can be used to realize the development and growth of the rural collective economy. Path 1: With or without human support, with high financial support (core condition) and government support (marginal condition) and lacking resource support (core condition), rural collective economic organizations may achieve an income increase. Under this condition, it is difficult for rural collective economic organizations to increase income by taking advantage of their resources or using universities' power. At this point, rural collective economic organizations will choose to cooperate with enterprises and the Government, participating in the projects and funds provided by the two, such as through equity participation, to increase the income of rural collective economic organizations.

Path 2: With or without government support, rural collective economic organizations are more likely to achieve income growth with higher financial support (core condition) and human support (core condition) and lack of resource support (marginal condition). Specifically, capable people tend to have solid political color, social relations, and significant influence on collective action. This is because the village people are the first to identify the modern thinking of factors and agricultural price changes, often as a "primary action group" of institutional change, as a potential profit discovery, leading the innovation of agrarian business methods. Financial support can improve the rural collective economic organization revenue and operational efficiency, provide more public service supply for rural areas, improve rural life and economic development hardware, and promote the development of public welfare in rural communities.

**Table 2.** Constructs of antecedent conditions for the development and growth of the rural collective economy

Conditional variable	High income from the rural collective economy		
	Path 1	Path 2	Path3
Government supports	●		●
Resource support	⊗	⊗	
Financial support	●	●	●
Human resources support		●	●
Original coverage	0.491	0.450	0.56
Unique coverage	0.07	0.289	0.139
Consistency	0.933	0.992	0.987
Overall solution coverage	0.659		
Overall solution consistency	0.94		

Path 3: Regardless of whether there is resource support or not, as long as there is a high level of financial support (core condition), human resources support (core condition), and government support (marginal condition), the rural collective economic organization may achieve increased income. First, grassroots governments need to find suitable village agents to run villages. Thanks to the status of grassroots government agents, village cadres are familiar with the allocation and use of project resources and thus can screen and prioritize the acquisition of reasonable and legitimate project resources. Second, social capital facilitates the exchange of information and resources through relational and structural embedding, provides employment opportunities to village collective members, and helps village collectives build infrastructure. Third, the participation of agribusinesses in village social governance and the introduction of capital, technology, and other resources to villages will be affected by the local political environment and other relevant factors. Thus, agribusinesses need to pay attention to their interaction with local governments.

### 3.7 Robustness Tests

In this paper, the robustness of the model is examined by two tests: (1) Adjusting the original consistency level. Mainly change the PRI limit range from the original  $PRI < 0.7$  manually adjust the value to 0 to  $PRI < 0.75$  adjusted to 0, to keep the RC interval still in the  $[0.8, 1]$  between. (2) Change the original measurement method. In selecting data anchors, the original 95th, 50th, and 5th quartiles were changed to the 75th, 50th, and 25th quartiles, and the data were re-measured. It was found that the measurement results of the two tests showed that the grouping paths remained unchanged and that the computational results and conclusions of the study remained robust.

## 4 Conclusion

This study investigates the survey data of six districts and counties and 29 village collectives in Sichuan Province, takes the income of rural collective economy as the outcome variable, analyzes it with CRITIC weighting method and fsQCA qualitative research method, empirically examines three development paths for the development and growth of rural collective economy, and finds that the financial support is the core condition of the three paths, the human resources support is the core condition of the two paths, the government support is the two paths marginal conditions, and resource support is the lack condition of the two paths. This is because (1) own funds to ensure the development of village collective industry, the multiple embedded government funds and social funds can expand the diversified mode of operation; (2) human resources support is a necessary support to build a governance community, establish a scientific and reasonable governance mechanism, and stabilize the external participation force, to ensure the sustainable development of the village collective. (3) Government support can provide an excellent institutional guarantee for village collective development.

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